

3D Visualization System for Tracking and Identification of Objects, Phase I

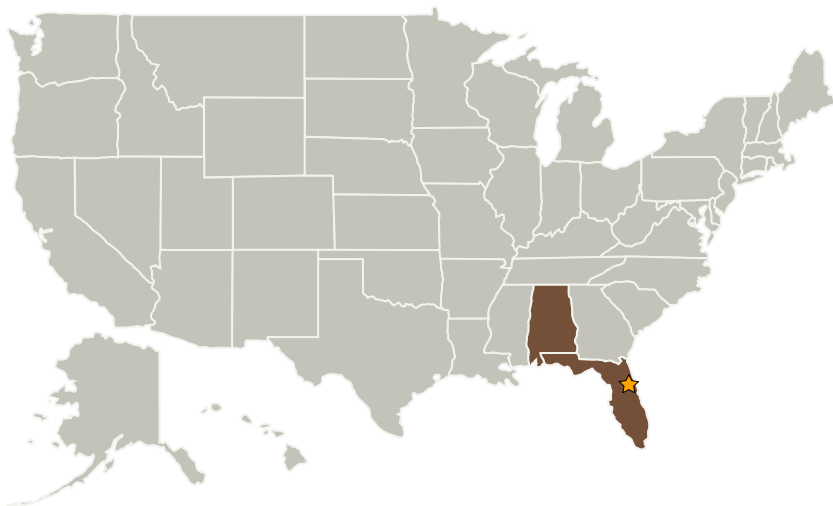
Completed Technology Project (2006 - 2006)



Project Introduction

Photon-X has developed a proprietary EO spatial phase technology that can passively collect 3-D images in real-time using a single camera-based system. This technique provides the capability to sense and understand objects and features within a range of distances from low atmospheric altitudes to space. Feedback from the camera allows the Photon-X system to perform 3-D path planning and trajectory assessment for multiple objects of various sizes and shapes. Spatial phase technology provides scene data that is range independent and angle invariant allowing data of tumbling objects to be collected even in the presence of smoke, clouds, or haze. During Phase I, Photon-X plans to model 3D views of tumbling objects and develop preliminary feature extraction and predictive trajectory and range software tools. These tools will be used to demonstrate proof-of-concept for a single controlled scenario. This initial groundwork will be used in selecting the best design approach for Phase II to meet established system goals. A Phase II system will build on the concepts shown in the Phase I proof-of-concept demonstration. A Phase II system will collect image data and track an object in real-time with collected data stored and processed later for feature extraction and 3D modeling.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission
Directorate (STMD)

Lead Center / Facility:

Kennedy Space Center (KSC)

Responsible Program:

Small Business Innovation
Research/Small Business Tech
Transfer

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Organizations Performing Work	Role	Type	Location
★ Kennedy Space Center(KSC)	Lead Organization	NASA Center	Kennedy Space Center, Florida
Photon-X, Inc.	Supporting Organization	Industry	Huntsville, Alabama

Primary U.S. Work Locations	
Alabama	Florida

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
 - └ TX12.4 Manufacturing
 - └ TX12.4.6 Repurpose Processes